

# XPERIA™ ray



ST18i, ST18a

# Purpose of this document

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Sony Ericsson product White papers are intended to give an overview of a product and provide details in relevant areas of technology.

# Document history

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## Version

June 2011	First released version	Version 1
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# Sony Ericsson Developer World

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# Product overview

## Xperia™ ray

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Sleek and irresistibly elegant with a clear vibrant display, the Xperia™ ray combines compactness with high functionality and style. Here's a summary of the main features:

- Elegant smartphone with aluminium frame, mineral glass – and only 9.4mm thin
- Great stills and videos even in low light with Exmor R™ for mobile
- Reality Display with Mobile BRAVIA® Engine
- Fast, powerful smartphone with all the apps you need

### 9.4mm thin

Just 9.4mm thin and 100g light, the Xperia™ ray can fit neatly into the palm of your hand, or slide comfortably into a small shirt or jeans pocket. Its flat aluminum frame adds further grace and style. But it's got more than just good looks. The Xperia™ ray combines the best of Android with the latest goodies from Sony Ericsson.

### Vibrant visuals

The Xperia™ ray delivers HD video and 8.1 megapixel photo capturing. Capture exceptionally clear photos and videos even by candlelight with Exmor R for mobile, a back-illuminated CMOS sensor that uses light more efficiently than conventional front-illuminated pixel technologies. Mobile BRAVIA ENGINE further enhances the visual experience, combining magically with the scratch-resistant mineral glass and 3.3 inch Reality Display. The black screen finish cuts down on light lost through reflection, resulting in a clearer image. And if that's not enough, you get to browse the web in FWVGA resolution.

### Power to go

The Xperia™ ray's durable 1500mAh battery combines with the pre-installed power save mode application to give you up to five times more staying power. So you can chat, watch videos and enjoy your music for as long as you want.

### Grow with Android Market

With the Android Market application installed as standard on your Xperia™ ray, you can easily download everything from games to everyday tools and entertainment apps. With more than 200,000 apps available, there are thousands of ways to personalise your life.



## Sony Ericsson signature features

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The Xperia™ ray comes with a range of Sony Ericsson features as standard. Below is a summary of the key signature features.

### **Sony Ericsson Timescape™**

#### **The place to meet your friends**

The Timescape™ application manages all your communication with one person in one place. You can effortlessly browse by category your Facebook™, Twitter™, email and text communications, as well as view your photos. Now everything is all together and in chronological order, so you don't have to open different applications to see what's going on.

### **Sony Ericsson infinite button**

#### **Everything you want – from everywhere**

Tap the infinite button in the Timescape™ application and smart filter each category of communication by person. For example, when viewing a text message from a friend in Timescape™, tap the infinite button to view a list of all chat messages with that friend.

### **Sony Ericsson Sync™**

#### **Your mobile life on the web**

Synchronise your phone data using Sony Ericsson Sync so that you always have a backup. While you're at it, match your phone contacts with your Facebook™ contacts. All your synchronised phone data is right at your fingertips and in your account on [www.sonyericsson.com](http://www.sonyericsson.com).

### **Sony Ericsson Local connectivity**

#### **More control over your media**

Using Sony Ericsson Local connectivity, you can exercise more control over how media files get transferred and stored. For example, you can select MTP mode to transfer files if you want to limit the risk of data corruption or select MSC mode if you want to have more control over the data storage.

### **Sony Ericsson Home screen application**

#### **The place you call Home**

Customise your Home screen with widgets, shortcuts, folders, themes, wallpaper and other items. Where's best for you? Email top right? Music player bottom left? You decide. With four extensions to your Home screen, you've got plenty of space to put things where you want. Just remember to flick left or right to find them.

**Note:** Some of the services mentioned above may not be available in all markets.

## Facts – dimensions, weight, performance and networks

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<b>Operating system</b>	Google™ Android™ 2.3 (Gingerbread)
<b>Processor</b>	1 GHz Qualcomm Snapdragon™ MSM8255
<b>Size</b>	111x 53x9.4 mm
<b>Weight</b>	100 grams
<b>Available colours</b>	Black Gold Pink White
<b>Main screen</b>	
Colours	16,777,216 colour TFT
Resolution	854x480 pixels
Size (diagonal)	3.3 inches
Scratch resistant	Shatter proof sheet on scratch-resistant glass
<b>Input mechanisms</b>	
Text input	On-screen QWERTY keyboard, 12 key input
Touch screen	Capacitive (multi-touch)
Touch gesture	Yes - multi-touch
<b>Memory</b>	
Internal phone storage	1 GB (up to 300 MB of user accessible memory)
RAM	512 MB
Expansion slot	microSD™, up to 32 GB
<b>Camera</b>	
Camera resolution	8.1 megapixel
Front-facing camera	Yes
Digital zoom	16x
Video recording	Yes - HD 720p
<b>Sensors</b>	
Accelerometer	Yes
Proximity sensor	Yes
Ambient light sensor	Yes
Magnetometer	Yes

<b>Networks</b>	
ST18i	UMTS HSPA 900 (Band VIII), 2100 (Band I) GSM GPRS/EDGE 850, 900, 1800, 1900
ST18a	UMTS HSPA 800(Band VI), 850 (Band V), 1900 (Band II), 2100 (Band I) GSM GPRS/EDGE 850, 900, 1800, 1900
<b>Data transfer speeds</b>	
GSM GPRS	Up to 86 kbps
GSM EDGE	Up to 237 kbps
UMTS HSPA cat 6 (upload)	Up to 5.8 Mbps
UMTS HSPA cat 8 (download)	Up to 7.2 Mbps
<b>Talk time (GSM)</b>	Up to 6 hours 50 mins*
<b>Standby time (GSM)</b>	Up to 430 hours*
<b>Talk time (UMTS)</b>	Up to 7 hours*
<b>Standby time (UMTS)</b>	Up to 440 hours*
<b>Music listening time</b>	Up to 36 hours
<b>Video playback time</b>	Up to 6 hours 45 mins
<b>Battery</b>	1500 mAh

*\*Values are according to GSM Association Battery Life Measurement Technique.*

**Note:** *Battery performance may vary depending on network conditions and configurations, and phone usage.*

## Application overview list

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### **Sony Ericsson signature applications**

Sony Ericsson Home screen application  
Sony Ericsson Music Player  
Sony Ericsson Timescape™

### **Sony Ericsson services**

PlayNow™ service\*  
TrackID™ application  
Sony Ericsson Sync™





### **Other applications**




Facebook™ \*  
Microsoft® Exchange ActiveSync®  
Wisepilot™ turn-by-turn navigation (free trial version)\*

*\*This service is not available in all markets.*



## Categorised feature list

 <p><b>Camera</b>        8.1 megapixel camera        16x digital zoom        Aperture f/2.4        Auto focus        Face detection        Face recognition        Photo light        Front-facing camera (VGA)        Geo tagging        HD video recording (720p)        Image stabiliser        Scene detection        Self-timer        Send to web        Smile detection        Sony Exmor R™ CMOS sensor        Touch capture        Touch focus        Video light        Video recording        Video stabiliser</p>	 <p><b>Music</b>        Album art        Bluetooth™ stereo (A2DP)        Music tones (MP3/AAC)        PlayNow™ service**        SensMe™        Sony Ericsson Music Player        TrackID™ music recognition application**        xLOUD™ Experience</p>	 <p><b>Internet</b>        Android Market*        Bookmarks        Google™ search**        Google Voice Search**        NeoReader™ barcode scanner        Pan &amp; zoom        Web browser (WebKit)</p>
 <p><b>Communication</b>        Call list        Conference calls        Facebook™ application        Google Talk™        Noise Shield        Polyphonic ringtones        Sony Ericsson Timescape™        Speakerphone        Twitter™ (Timescape™ integration)        Vibrating alert        Video chat ready</p>	 <p><b>Messaging</b>        Conversations        Email        Google Mail™        Instant messaging        Picture messaging (MMS)        Predictive text input        Text messaging (SMS)</p>	 <p><b>Design</b>        Auto rotate        Keyboard (on-screen, 12 key)        Keyboard (on-screen, QWERTY)        Picture wallpaper        Reality display with Sony Mobile BRAVIA® Engine        Touch screen        Wallpaper animation</p>

 <p><b>Entertainment</b>          3D games          Media browser          Motion gaming          Radio (FM radio with RDS)          Video streaming          YouTube™ *</p>	 <p><b>Organiser</b>          Alarm clock          Calculator          Calendar          Document editors          Document readers          E-Manual          Flight mode          Google Calendar™          Google Gallery 3D™*          Infinite button          Phone book          Setup Wizard          Widget manager</p>	 <p><b>Connectivity</b>          3.5 mm audio jack          aGPS          Bluetooth™ technology          DLNA Certified™          Google Latitude™          Google Maps™ with Street View          Media Transfer Protocol support          Micro USB support          Modem          Native USB tethering          Synchronisation via Facebook™          Synchronisation via Google™ Sync*          Synchronisation via Sony Ericsson Sync          Synchronisation with computer          Synchronisation via Exchange ActiveSync®          USB High speed 2.0 support          USB mass storage          Wi-Fi®          Wi-Fi® Hotspot functionality          Wisepilot™ turn-by-turn navigation*</p>
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\* Applications from the Android Market™ vary widely in size, from less than 100 KB for small utilities to 3-4 MB for full games, music player applications, or other major offerings. The average size, if a representative selection of useful and fun applications is selected, is about 1 MB. This means that, on average, more than 100 applications can be downloaded and used on your device without negatively impacting performance. With the ready availability of the Android Market™ application in the phone, it is also very easy to delete and later reinstall infrequently used applications.

\*\* This service is not available in all markets.

# Technologies in detail

**NOTE:** The information outlined below is general and levels of compliance to standards and specifications may vary between products and markets. For more information, contact Sony Ericsson Developer World or your Sony Ericsson contact person where applicable.

## Device-to-device communications (local)

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### Bluetooth wireless technology

Bluetooth™ profiles supported	Advanced Audio Distribution Profile v1.2 Audio/Video Remote Control Profile v1.0 Handsfree Profile v1.5 Headset Profile v1.1 Object Push Profile v1.1 Phonebook Access Profile v1.0
Core version and supported core features	Advanced Audio 2.1+EDR
Connectable devices	Products supporting at least one of the profiles above.

More information:

[www.sonyericsson.com/developer](http://www.sonyericsson.com/developer)

[www.bluetooth.com](http://www.bluetooth.com)

**Wi-Fi®**

Supported standards	IEEE 802.11b/g/n and Wi-Fi®.
Connectable devices	Wi-Fi® access points
Frequency band	2.4 GHz
Data transfer rate	Up to 72 Mbit/s
Security	WEP 64 bit WEP 128 bit TKIP CCMP (AES) Open Authentication Shared Authentication EAP-TLS EAP-TTLS/MSCHAPv2 PEAPv0/EAP-MSCHAPv2 PEAPv1/EAP-GTC WPA Personal and WPA2 Personal WPA Enterprise and WPA2 Enterprise
Encryption	WEP, TKIP and AES
Power save	WMM-UAPSD QoS, WMM

**DLNA™ (Digital Living Home Alliance)**

Supported Device Classes	M-DMS – Mobile Digital Media Server Media Types: Images Summary: The digital media server exposes the media files in your phone to a Wi-Fi® network. The media files can then be accessed from other DLNA clients.
Supported Bearers	Wi-Fi®
DRM Support	The Sony Ericsson DLNA implementation does not support DRM-protected content.

## Messaging

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### MMS (Multimedia Messaging Service)

MMS 1.0 is supported.

### Email

Bearer type (IP)	GPRS, EGPRS, UMTS
Character sets	BIG5 Traditional Chinese GB2312 Simplified Chinese ISO-2022-JP Japanese ISO-8859-1 ISO-8859-2 Eastern Europe ISO-8859-5 Cyrillic ISO-8859-7 Greek ISO-8859-9 Turkish ISO 8859-11 KOI8-R Cyrillic Shift_JIS Japanese USASCII UTF-16 UTF-8 Windows® 874 Windows® 1251 Cyrillic Windows® 1252 Windows® 1254 Turkish Windows® 1258 Vietnamese
Protocols	POP3 and IMAP4
Push email	Microsoft® Exchange ActiveSync® (EAS)
Secure email	SSL/TLS, both port methods (POPS/IMAPS) and START-TLS
HTML mail	Yes (read only)

#### More information:

[www.sonyericsson.com/developer](http://www.sonyericsson.com/developer)

[www.openmobilealliance.org](http://www.openmobilealliance.org)

## **Positioning – location based services**

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Supported standards:

OMA Secure User Plane Location (SUPL) v1.0

3GPP™ Control Plane location (incl. Emergency location)

Qualcomm® GPSOneXtra

## **Provisioning (OMA CP)**

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OMA CP version 1.1

## Multimedia (audio, image and video)

<b>Audio Playback</b>	<b>Decoder format</b> Audio decoding MPEG-1/2/2.5, audio layer 3 AAC, AAC+, eAAC+ AMR-NB, AMR-WB General MIDI (GM) Linear PCM 16bit OTA Ogg vorbis	<b>Supported in file format</b> MP3 (.mp3) , 3GPP (.3gp); MP4 (.mp4, .m4a) 3GPP (.3gp) MP4 (.mp4) 3GPP (.3gp) MP4 (.mp4) SMF (.mid) WAV (.wav) OTA (.ota) Ogg vorbis (.ogg)
<b>Audio Recording</b>	<b>Encoder format</b> AMR-NB, AMR-WB  AMR-NB, AMR-WB, AAC-LC stereo, sample rate 48 kHz bit rate 128 kbps	<b>Supported in file format</b> 3GPP (.3gp), MP4 (.mp4), AMR(.amr) 3GPP (.3gp), MP4 (.mp4)
<b>Image Playback</b>	<b>Decoder format</b> 1, 4, 8, 16, 24 and 32 bpp and RLE encoded formats Single and multi frame, bitmap mask support (GIF87a format and GIF89a format) Joint Photographic Experts Group Portable Network Graphics Bitmap mask support Wireless Bitmap	<b>Supported in file format</b> BMP (.bmp)  GIF (.gif)  JPEG (.jpg)  PNG (.png)  WBMP (.wbmp)
<b>Image Capture</b>	<b>Encoder format</b> Joint Photographic Experts Group	<b>Supported in file format</b> JPEG (.jpg)
<b>Video Playback</b>	<b>Decoder format</b> MPEG-4 Visual Simple Profile, Advanced Simple Profile Level 6 H.264 High Profile Level 3.1 H.263 Profile 0, Profile 3 Level 70	<b>Supported in file format</b> 3GPP (.3gp); MP4 (.mp4) 3GPP (.3gp); MP4 (.mp4) 3GPP (.3gp)
<b>Video Recording</b>	<b>Encoder format</b> - Video H.263 Profile 0, H.264 Baseline Profile - Audio: AAC-LC stereo, sample rate 48 kHz bit rate 128 kbps, AMR-NB	<b>Supported in file format</b> 3GPP (.3gp), MP4 (.mp4)
<b>Audio/Video Streaming</b>	Streaming transport	RTSP according to 3GPP™ HTTP streaming
<b>DRM</b>	DRM (Digital Rights Management) – features the rights and copy protection of downloaded content.	OMA DRM 1.0



## Synchronisation (OMA DS, EAS, Google Sync™)

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OMA Data Synchronisation protocol versions 1.1.2 and 1.2.

OMA Data Formats: vCard 2.1, vCalendar 1.0.

Microsoft® Exchange ActiveSync® protocol version 2.5

Microsoft® Exchange ActiveSync® protocol version 12

Google Sync™

Related information: [www.sonyericsson.com/developer](http://www.sonyericsson.com/developer)

## Web browser

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Browser version	Android 2.3 Browser (Based on WebKit)
Navigation/rendering	Pan & Zoom Landscape/portrait rendering Full page PC rendering Adobe™ Flash™ 10.1
Search	Internet Search
Browser compliancy	HTML version 4.0 HTML version 5.0 XHTML Basic version 1.0 XHTML 1.1  CSS 2.0 CSS 2.1 CSS 3.0  JavaScript 1.7/ECMA-script 262 3rd edition  DOM 2.0 DOM 3.0
Supported Device API	Geo-location API
Protocol compliancy	HTTP/1.1 TLS 1.0 and SSL 3.0 Gzip OMA Download 1.0

Related information:

[www.sonyericsson.com/developer](http://www.sonyericsson.com/developer)

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